Quotes on Critical and Creative Thinking

Critical thinking, creative thinking, and reflective practice are valued, of course, in all fields. In critical thinking we seek to scrutinize the assumptions, reasoning, and evidence brought to bear on an issue-by others and by oneself; such scrutiny is enhanced by placing ideas and practices in tension with alternatives. Key functions of creative thinking include generating alternative ideas, practices, and solutions that are unique and effective, and exploring ways to confront complex, messy, ambiguous problems, make new connections, and see how things could be otherwise. In reflective practice we take risks and experiment in putting ideas into practice, then take stock of the outcomes and revise our approaches accordingly. (*University of Massachusetts, School of Education, Graduate program in critical and creative thinking. Boston, University of Massachusetts*.)

Students are expected to develop the abilities, especially the writing skills, that are

essential to critical thinking. These abilities include interpreting complex texts,

constructing an argument, supporting the argument with evidence, and defending the

argument orally. Critical thinking also requires the ability to appreciate and critique

multiple perspectives, including one’s own. (*A Wooster Education*).

One of the cornerstones of Wooster’s curriculum is the First Year Seminar in Critical Inquiry. The learning objectives for First Year Seminar (FYS) exemplify the connection that the College recognizes between critical thinking and critical writing. As stated in A Wooster Education, the learning objectives are:

· to develop writing skills that are essential to critical thinking,

· to interpret complex texts,

· to construct an argument,

· to support the argument with evidence,

· to defend the argument orally, and

· to appreciate and critique multiple perspectives, including one’s own

CONSENSUS STATEMENT REGARDING CRITICAL

THINKING AND THE IDEAL CRITICAL THINKER

We understand critical thinking to be purposeful, self-regulatory judgment which

results in interpretation, analysis, evaluation, and inference, as well as explanation

of the evidential, conceptual, methodological, criteriological, or contextual

considerations upon which that judgment is based. CT is essential as a tool of

inquiry. As such, CT is a liberating force in education and a powerful resource in

one's personal and civic life. While not synonymous with good thinking, CT is a

pervasive and self-rectifying human phenomenon. The ideal critical thinker is

habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making

judgments, willing to reconsider, clear about issues, orderly in complex matters,

diligent in seeking relevant information, reasonable in the selection of criteria,

focused in inquiry, and persistent in seeking results which are as precise as the

subject and the circumstances of inquiry permit. Thus, educating good critical

thinkers means working toward this ideal. It combines developing CT skills with

nurturing those dispositions which consistently yield useful insights and which are

the basis of a rational and democratic society. (*Critical Thinking: A Statement of*

*Expert Consensus for Purposes of Educational Assessment and Instruction*, Santa Clara University, 1990)

**Critical Thinking**

**ABSTRACT REASONING**

Here is a list of "critical thinking" reasoning abilities identified by physicist Arnold Arons. What additions or deletions would you add to the list for your courses?

1. Consciously raising the questions "What do we know. . . ? How do we know. . . ? Why do we accept or believe. . . ? What is the evidence for. . . ?" when studying some body of material or approaching a problem.
2. Being clearly and explicitly aware of gaps in available information. Recognizing when a conclusion is reached or a decision made in absence of complete information and being able to tolerate the ambiguity and uncertainty. Recognizing when one is taking something on faith without having examined the "How do we know. . . ? Why do we believe. . . ?" questions.
3. Discriminating between observation and inference, between established fact and subsequent conjecture.
4. Recognizing that words are symbols for ideas and not the ideas themselves. Recognizing the necessity of using only words of prior definition, rooted in shared experience, in forming a new definition and in avoiding being misled by technical jargon.
5. Probing for assumption (particularly the implicit, unarticulated assumptions) behind a line of reasoning.
6. Drawing inferences from data, observations, or other evidence and recognizing when firm inferences cannot be drawn. This subsumes a number of processes such as elementary syllogistic reasoning (e.g., dealing with basic prepositional "if. . .then" statements), correlational reasoning, recognizing when relevant variables have or have not been controlled.
7. Performing hypothetico-deductive reasoning; that is, given a particular situation, applying relevant knowledge of principles and constraints and visualizing, in the abstract, the plausible outcomes that might result from various changes one can imagine to be imposed on the system.
8. Discriminating between inductive and deductive reasoning; that is, being aware when an argument is being made from the particular to the general or from the general to the particular.
9. Testing one's own line of reasoning and conclusions for internal consistency and thus developing intellectual self-reliance.
10. Developing self-consciousness concerning one's own thinking and reasoning processes.

Scriven and Paul suggested the following definition to the National Council for Excellence in Critical Thinking (http://www.criticalthinking.org/aboutCT/define\_critical\_thinking.cfm):

*Critical thinking is the intellectually disciplined process of actively and skillfully*

*conceptualizing, applying, analyzing, synthesizing, and/or evaluating information*

*gathered from, or generated by, observation, experience, reflection, reasoning, or*

*communication, as a guide to belief and action. In its exemplary form, it is based*

*on universal intellectual values that transcend subject matter divisions: clarity,*

*accuracy, precision, consistency, relevance, sound evidence, good reasons, depth,*

*breadth, and fairness.*

Paul and Elder (2004) suggest the following elements of critical thinking:

• All reasoning has a purpose

• All reasoning is an attempt to figure something out, to settle some question, to solve

some problem

• All reasoning is based on assumptions

• All reasoning is done from some point of view

• All reasoning is based on data, information, and evidence

• All reasoning is expressed through, and shaped by, concepts and ideas

• All reasoning contains inferences by which we draw conclusions and give meaning

• All reasoning leads somewhere, has implications and consequences